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INTRODUCTION

Training can be defined as the systematic acquisition of skills, rules, concepts, or attitudes that result in improved performance in the work environment (Goldstein, 1993). A conservative estimate of yearly training expenditures is more than 200 billion dollars (McKenna, 1988). Training can consist of teaching people how to operate a piece of machinery, work with customers, supervise people, or manage the operations of an organization. Regardless of its content or focus, training programs will increase in importance in the years ahead. Improving the acquisition of knowledge and the successful transfer of that knowledge back at the work site will be vital to the success of future training efforts.

As a result of these considerations, a great deal of recent attention has been devoted to the issue of trainability. Trainability is the degree to which training participants learn and apply the training program material (Noe & Schmitt, 1986). Several factors have been identified that may influence an individual's trainability. However, trainee ability and motivation seem to be the most researched (Wexley & Latham, 1981), with ability receiving most of the academic attention. Additional attention needs to be focused on motivation.

Motivation is the energizing, directing, and maintaining components of the trainee's performance (Steers & Porter, 1975).

The importance of trainee motivation cannot be overlooked. As Maier (1973) pointed out, if motivation is low or absent, ability alone will fail to result in satisfactory performance.

Motivation represents a critical component of trainee success. Trainees bring varying levels of motivation with them to the training program with these differences resulting in varying levels of training performance. To squeeze the most utility out of training dollars, motivation levels need to be maximized. Before trainee motivation can be maximized, however, a more thorough understanding of motivation is necessary. More specifically, key antecedents of training motivation need to be identified and examined for their impact on trainee motivation.

The general purpose of this research proposal was to gain a more thorough understanding of trainee motivation. To accomplish this, trainee motivation was examined, with a specific emphasis on motivation to learn, and the antecedents of motivation to learn. The Theory of Planned Behavior (Ajzen, 1985, 1987; Ajzen & Madden, 1986) was introduced as a mechanism for outlining and understanding how the antecedents of motivation result in motivation levels. The Theory of Planned Behavior stresses that behavioral intentions capture the motivational factors that influence behavior (Ajzen, 1991). Although not identical by definition, behavioral intentions and motivation represent very similar constructs in this paper. The word motivation is preferred by the author and will be used in lieu of behavioral intentions, where appropriate, throughout this paper.

According to the Theory of Planned Behavior, the antecedents of motivation are attitudes toward training, subjective norms, and perceived behavioral control. Each of these antecedents will be thoroughly explored using the available training literature.

Prior to addressing training motivation, however, it is necessary to explore the role, and increased importance, of training in the future and the role trainee motivation will play. The proposal will begin with a short review of various workforce and organizational factors that pose new challenges to the training community. Upon conclusion of this review section, the proposal will address the issues of motivation outlined above.

Future Training Needs

In their forward looking article on training, Goldstein and Gilliam (1990) identified several factors pointing to the importance of training in the year 2000. They cited changing demographics of the work force, increasing workplace technology, changing structure of the workplace, and increasing global competition as reasons for the increased reliance on and importance of training programs.

Workforce Demographics

Unskilled and under-educated people will comprise a large percentage of future employees (Cascio & Zammuto, 1987; Fullerton, 1985). According to Goldstein (1993), the reduction in skill and education levels will result in fewer qualified people available for selection. With lower selection ratios, companies will be forced to hire lower ability employees, and

will be required to bring these people up to company standards prior to being able to adequately employ them in their intended position. Training programs and other techniques will be required to fill in the gaps of knowledge of these newly hired people so they can be contributing employees.

Workers in the 21st Century will also be much more diverse than their predecessors. Women and people from wider age groups cultures, and ethnic backgrounds will comprise a much greater percentage of the workforce. There will be increased demands on the workforce and training will be needed to help them adapt to their everchanging roles (Cascio, 1995).

Changes in Technology

While the level of employee skills are declining, the requisite technological skills are increasing. While these increases in technology may remove drudgery from many jobs, there will be increased cognitive demands placed upon the worker by this new machinery (Howell & Cooke, 1989). New machines require knowledge beyond that of procedures, rendering the incumbent knowledge-base obsolete. Future workers will be expected to diagnose, and make inferences, judgements, and decisions, often under time pressure (Goldstein & Gilliam, 1990; Pfeffer, 1994). To compete and prosper, motivated and technically literate people will be needed (Cascio, 1995). Some form of training program will be required to educate these employees prior to coming on line with their respective employer.

Organizations working with dynamic technologies will be

required to have continual retraining programs to keep their employees current. As an example, Kaufman (1978) estimated the half life of an engineer's education to be five years (meaning half of what was learned in school is obsolete in five years). Given this, the only way for an engineer to stay current is through continuous training.

The Changing Structure of the Workplace

One structural change is the shift from manufacturing to service-oriented jobs. This change will result in the obsolescence of many jobs and skills. Consider that nearly nine out of ten new jobs created between 1984 and 1995 were in the service-producing industry (Personik, 1985). Retraining programs will have to be developed taking into account how to retrain people who already have knowledge in other, probably related, areas (Goldstein & Gilliam, 1990). These retraining programs will also face the challenge of motivating people to perform lower paying, less sophisticated, service-sector jobs compared to their previous manufacturing-sector jobs. (Goldstein & Gilliam, 1990).

Several 21st Century workplace trends have been formulated which point to the increasing role of learning in organizational contexts (Kiechel, 1993). Cascio (1995) sees leaner organizations in the future. These organizations will tend to maintain well-trained multispecialists, and farm out to other companies work that is beyond their core competencies. Wheatley (1994) sees learning as ubiquitous and constant. These trends

will require trainers to develop programs that address the needs of the organization. The programs may differ greatly from what is currently the norm.

The Global Economy

Lastly, the presence of a global economy necessitates novel work strategies in order to remain competitive in these markets (Klein & Hall, 1988). As an example, many product components and subcomponents are assembled in several locations in an effort to save assembly costs. Corporate and management strategies will need to be developed to facilitate the smooth production and coordination of the assembly sequence. After development, successful ideas will need to be shared, sometimes on a global basis. Training programs will be challenged to develop techniques that address these unique circumstances.

Taking the above information into account, it can be assumed that training will become increasingly important in the future. As increasing sums of money are allocated toward training, organizations will demand to see a return on their investment through qualified workers, increased productivity, or some other outcome. Current training methods and procedures will need to be thoroughly examined to look for ways to improve them.

People arriving in the workforce will have ability levels that are fairly stable. In many cases these ability levels will be borderline acceptable. As a way to combat these potential ability shortcomings, other trainee characteristics which may compensate for this ability deficit need to be considered. One

such characteristic is trainee motivation. This proposal will now focus on trainee motivation.

Training Motivation

Motivation is composed of energizing, directing, and maintaining components (Kanfer, 1990; Mitchell, 1982; Steers & Porter, 1975). The energizing and maintaining components relate to the time and effort the individual invests, and direction relates to the behaviors in which the time and effort are made (Naylor, Pritchard & Ilgen, 1980). In the training environment a motivated person is energized toward the program. This same person directs energy toward mastery of the course material. Finally, a motivated person maintains their effort in the presence of competing demands or obstacles to applying their newly acquired knowledge.

Noe (1986) identified two types of training motivation, motivation to transfer and motivation to learn. Motivation to transfer refers to effort to apply learned principles back at the job site. Motivation to learn is the effort put forth to master the concepts of the course. Motivation, then, is the "will do" element of training (Noe, 1986). Although motivation to transfer is important to training programs, motivation to learn will be the primary emphasis of this study.

Motivation is a critical component for success in a training program. As Maier (1973) has pointed out, if motivation is low or absent, ability alone will not result in satisfactory training performance. Goldstein (1993) identified low motivation as one

of the factors responsible for poor training performance. In applied settings, lack of motivation has led many managers to conclude that low trainee motivation reduces learning (Baldwin, Magjuka, & Loher, 1991). Ryman and Bierser (1975) found that trainees who entered training with high levels of motivation were more likely to graduate from the training program than their less motivated cohorts.

What is the cause of training motivation? Several antecedents of motivation have been examined in field and laboratory settings; training fulfillment (Tannenbaum, Mathieu, Salas, & Cannon-Bowers, 1991), situational constraint and influences (Mathieu, Tannenbaum, & Salas, 1992; Tziner, Haccoun, & Kadish, 1991), organizational fairness (Quinones, 1995), self efficacy (Noe & Wilk, 1993; Quinones, 1995), degree of program choice (Hicks & Klimoski, 1987), career and job attitudes (Noe & Schmitt, 1986), locus of control (Tziner, Haccoun, & Kadish, 1991), demographic variables, learning strategies, and anxiety (Warr & Bunce, 1995). Additionally, several models of training motivation have been developed in conjunction with the above research to explain the process of motivation. Unfortunately, no one model has gained wide acceptance. In an attempt to provide a model suitable for widespread use, this paper proposes a model that takes into account many of the previously investigated antecedents of motivation and combines them into a cohesive model.

Motivational Theories

The proposed model is the Theory of Planned Behavior (Ajzen, 1985, 1987; Ajzen & Madden, 1986). The Theory of Planned Behavior was an evolution of the Theory of Reasoned Action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), therefore, this latter theory will be reviewed first, followed by the additions of the Theory of Planned Behavior.

The Theory of Reasoned Action

The Theory of Reasoned Action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) helps explain the relationship between attitudes and behaviors (see Figure 1). The Theory of Reasoned Action is a motivational theory which considers intentions toward performing a behavior as the antecedent of the behavior itself. The stronger an individuals' intention, the harder they will try to perform the behavior. The harder a person tries, the more likely they will actually perform the behavior.

According to the Theory of Reasoned Action, intentions are preceded by two conceptually independent determinants, a personal and a social factor (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). The personal factor is the attitude toward the behavior. The attitude toward the behavior is an evaluation of how favorable it is for the person to perform the behavior. The social factor is a subjective norm toward the behavior. Subjective norm is the amount of perceived social pressure to perform the behavior. Attitudes and subjective norms are

weighted for importance and assumed to jointly determine each
behavioral intention.

INSERT FIGURE 1 ABOUT HERE

Attitudes and subjective norms are each preceded by
antecedent factors. The attitude toward the behavior is preceded
by beliefs about the possible outcomes of the behavior, and an
evaluation of each of these outcomes. The beliefs and
evaluations for each possible outcome are multiplied together.
The sum of these products represent the belief-based attitude
toward the behavior.

Subjective norms are preceded by normative beliefs and
motivation to comply with those beliefs. Normative beliefs take
into account a target (the trainee) and one or more significant
others. Significant others have preferences for the performance
of certain behaviors by the target. The target is aware that
their significant others have preferences, and the perception of
these behavioral preferences represent the target's normative
beliefs. The motivation to comply represents the level that the
target desires to comply with the perceived preferences of these
significant others. Normative beliefs and motivation to comply
are multiplied together, for each referent, and these products
are summed across all referents. The end result is a single
value which represents the subjective norm for that behavior.

As mentioned above, behavioral intentions are jointly

determined by considering the attitude toward the behavior and the subjective norm toward the behavior. The higher these are, the stronger the intention to perform the behavior. Individuals with strong intentions should try harder and the behavior will more than likely occur (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975).

The Theory of Reasoned Action has been successfully demonstrated in a variety of settings (see Shephard, Hartwick, & Warshaw, 1987; Van den Putte, 1991). However, the Theory of Reasoned Action was developed to explain behaviors that were volitional (under the control of the individual), but was not predicted to work well with behaviors that were not purely volitional (Ajzen & Madden, 1986). Ajzen and Madden saw that most behaviors were not under complete volitional control, and concluded that a control element was necessary to better explain and predict behavior.

The Theory of Planned Behavior

In response to this major limitation, Ajzen (1985, 1987), and Ajzen and Madden (1986) developed the Theory of Planned Behavior. The only significant change made to the Theory of Reasoned Action was to add perceived control as an antecedent to intentions, and a direct relationship was also added between perceived control and behavior (see Figure 2). Perceived behavioral control is one's perception of how easy or difficult it is to perform a particular behavior (Ajzen, 1985, 1987; Ajzen and Madden, 1986). By adding perceived control as an antecedent

of intention and behaviors, a major limitation of the Theory of
Reasoned Action was addressed. Becasue most behaviors are not
under complete volitional control, the prediction of
nonvolitional behavioral intentions could now be accomplished
using the Theory of Planned Behavior.

INSERT FIGURE 2 ABOUT HERE

Ajzen (1985) saw many behaviors as being contingent upon
factors not directly under the control of the individual.
Ordinary activities such as going to class could be thwarted by
factors beyond the control of the individual, such as weather,
car problems, or illness. Other activities may require
unavailable resources such as skills, time, money, or the
cooperation of other people. Ajzen saw behavioral control as
being on a continuum. Complete behavioral control would be at
one extreme, where individuals had ultimate control over
particular behaviors. At the other extreme were those behaviors
which were under minimal control by the individual. These
behaviors may demand resources, opportunities, or special skills
that the individual may or may not possess at varying levels.
Ajzen saw most behaviors as falling in between the two extremes.

Perceived behavioral control is preceded by control beliefs
and the perceived power of the control belief to inhibit or
facilitate performance. Control beliefs represent beliefs about
the likelihood that one possesses the necessary resources and/or

opportunities to perform the behavior or attain the goal (Ajzen, 1985, 1991). Control beliefs take into account factors internal and external to the individual. Internal factors can include knowledge, skills, abilities, and physical characteristics. In general, these internal factors can be summarized by considering an individual's self-efficacy for the behavior. External factors can include time, opportunity, resources, and teamwork, and can be referred to as situational constraints. With any behavior, there is a level of uncertainty, and it is this uncertainty that needs to be addressed when predicting behavioral intentions (Ajzen, 1985, 1987; Ajzen and Madden, 1986).

In this proposed study, the Theory of Planned Behavior will be applied to the training environment. Attitudes, subjective norms, perceived control, and their antecedents, as well as motivation level will be measured. Behaviors, however, will not be measured. The emphasis of this research is on the link between antecedents of motivation and motivation itself. The behavior of doing well in training will only serve as a framework from which to operationalize the measures of the model.

The paper will now examine how training literature research results can be applied to the Theory of Planned Behavior. More specifically, research on attitudes, subjective norms, and behavioral control will be examined for their relationship to motivation. Attitudes toward training behavior will be explored first.

Attitude Toward Training

According to the Theory of Planned Behavior (Azjen, 1985, 1987; Ajzen & Madden, 1986) attitudes are an antecedent of motivation. The focus of this section of the paper will be on this attitude-motivation relationship. Attitudes will be defined and the relationship between attitudes and motivation will be examined. Finally, the existence of an attitude-motivation relationship will be demonstrated using the available training literature.

Attitudes can be defined as relatively lasting evaluations of people, objects, or issues (Weiss & Cropanzano, in press). In the training environment, people can have an attitude toward the training program, the instructor, or the outcomes of the training program. Each of these attitudes may impact the trainees' motivation level. However, the outcomes of the training program are most applicable to attitude formation in the Theory of Planned Behavior.

Expectancy theory (Vroom, 1964) can be used to explain how motivation may be influenced by the outcomes of the training program. People attending training have a belief or expectancy that their effort will lead to a certain level of performance. They also believe that good performance is instrumental in obtaining the outcomes. The expectancy and instrumentalities represent the outcome beliefs of the individual. Additionally, each training outcome has a valence attached to it. The valence represents the evaluation of that outcome. Taken together, the

outcome beliefs and evaluation represent the attitude of the individual toward the training program. Favorable attitudes occur when the outcome beliefs and evaluations are positive.

According to the Theory of Planned Behavior, favorable attitudes toward an outcome result in establishing behavioral intentions. These behavioral intentions lead to actually performing the behaviors. The likely result of performing these behaviors is achieving the desirable outcome (Ajzen, 1991).

Consider, for example, a person with a favorable attitude toward the training program outcome of getting a choice assignment. This person is more likely to form behavioral intentions that will help her realize her goal of doing well and getting a choice assignment. These intentions should result in her performing those behaviors and reaching that performance goal and subsequent outcome.

A great deal of research has been conducted which examines the influence of motivation on performance (Baldwin, Magjuka, & Loher, 1991; Mathieu, Tannenbaum, & Salas, 1992; Noe & Schmitt, 1986). However, there is substantially less research examining the effect of attitudes on motivation. The research that is available examines the attitude-motivation relationship, and measures attitudes using the expectancy framework outlined above (Vroom, 1964).

In the studies which use the expectancy paradigm, trainees are asked for their attitudes toward performing behaviors relevant to the training program. For example, trainees are

asked how much effort they plan to exert toward learning the material (expectancy), if learning the material will have desirable outcomes, such as performance enhancements (instrumentality), and how much they value the outcome (valence). These types of questions help determine not only their attitudes toward the training program, but also their motivation level. That is, what are their training-related behavioral intentions.

By considering these expectancy measures, information can be obtained that relates to the Theory of Planned Behavior. More specifically, the relationship between training attitudes and motivation can be demonstrated.

In their field study, Warr and Bunce (1995) examined general and specific attitudes toward training. General training attitudes referred to overall attitudes toward work-related training programs. Specific attitudes referred to those attitudes toward the specific training program in which they were enrolled. Learning scores were derived from the tutor-assigned grades on training material. Reactions (outcome beliefs) were measured using trainee ratings of how useful the training would be for their job. Warr and Bunce (1995) found general and specific attitudes toward training to be significantly related to learning scores, reactions of usefulness, and learning strategies. General attitudes were a better predictor of learning scores while specific attitudes were the better predictor of reactions.

Overall, Warr and Bunce (1995) concluded that a positive

attitude toward training results in a trainee setting higher
learning goals. These higher goals result in increased trainee
motivation and effort (Locke and Latham, 1990), which results in
higher learning scores.

In a study of university employees, Mathieu, Tannenbaum, and
Salas (1992) examined attitudes toward the particular training
course using expectancy-theory based scales adapted from Lawler
(1981). Performance-outcome and outcome valence measures
represented measures of attitude or intended motivation toward
training. Learning was measured with a 20-item post-test.
Reactions to the training course were measured upon course
completion and assessed overall reaction to training (outcome
belief) and value of the training toward their jobs (outcome
evaluation).

A significant relationship was found between attitudes and
learning. However, there was an interaction between specific
attitudes, learning, and reactions. When reactions to the
program were favorable, the specific attitude and learning
relationship was stronger. More specifically, if training was
seen as producing favorable or valued outcomes (a indirect
measure of attitude), higher levels of motivation led to more
learning, possibly through the setting of more challenging goals.
The above results led Mathieu et. al. (1992) to conclude that
optimal training results should occur if trainees have favorable
attitudes and have positive reactions to or see value in the
training program.

In their field research using health maintenance organization, bank, and engineering firm employees, Noe and Wilk (1993) found significant positive correlations between expectancies of training program usefulness (outcome evaluation) and amount of past and intended future participation in training programs. More specifically, employees who had favorable attitudes toward the outcomes of training were more likely to have participated in past training and were more likely to participate in future training programs.

Hicks and Klimoski (1987) conducted a study to determine the effects of choice and amount of information presented about the training program on several outcome variables. Of interest to this study is their main effect for level of information presented. Subjects who were presented with information regarding the value (outcome evaluation) and expected outcomes (outcome beliefs) of the training had higher levels of motivation to learn, perceived more favorable outcomes from the training program, and were more committed to attend.

The results of this study demonstrate the link between outcome beliefs and attitudes. If the training outcome is favorable, favorable attitudes result. A positive attitude results in more challenging behavioral intentions and subsequent behavior and performance.

The results of the above literature clearly demonstrate the existence of a relationship between training program outcomes, attitudes toward these outcomes, and subsequent training

motivation and performance. When favorable outcomes are made salient, positive attitudes are formed. Positive training attitudes insure that mechanisms, such as behavioral intentions, are set in place to insure a favorable outcome from the training program. Behavioral intentions may lead to higher levels of effort through performing the behaviors and result in enhanced training performance (Locke & Latham, 1990). The following hypothesis are presented.

Hypothesis la. Outcome beliefs and outcome evaluations will be positively related to attitudes.

Hypothesis lb. Attitudes will be positively related to general behavioral intentions.

Hypothesis lc. Attitudes will be positively related to specific behavioral intentions.

Attitudes are a personal factor which may affect motivation, however, people typically don't operate in isolation. Therefore a social factor that operates as an antecedent of motivation must also be considered. Subjective norms represent this social factor and are also an antecedent of motivation. Subjective norms will be discussed next.

Subjective Norms

The Theory of Planned Behavior also considers subjective norms to be an antecedent of behavioral intentions. Within the confines of the training environment, subjective norms can be defined by considering the trainees significant others (referents). Significant others have preferences for desirable

training behaviors to be performed by the trainee. The trainee's perception of these preferences represent the referent beliefs. The trainee is aware of these beliefs, and has varying levels of motivation to comply with these referent beliefs. Referent beliefs and motivation to comply are combined to form a subjective norm.

In the training environment, the subjective norms for a trainee would be perceptions of referent others' preferences for performing training-related behaviors. Going to class, studying at night, starting a study group, and seeing the instructor are examples of training-related behaviors. At a more general level, subjective norms may also apply to training outcomes such as doing well, receiving an A, being tops in the class, etc.

The pretraining environment of organizations provides cues and signals which convey the value placed on organizational training programs. Some training programs may be more or less valuable than others, and performance may be contingent on their level of importance. In many cases, these cues represent norms about expected training behavior. These cues can be provided by managers, peers, or organizational policies and practices, and can be part of the employee socialization process (Feldman, 1989; Tannenbaum & Yukl, 1992).

After a review of the training literature, it can be concluded that subjective norms have not been directly measured using referent beliefs and motivation to comply. While referent beliefs are usually measured, motivation to comply is not. The

referent used is typically the supervisor, teacher, or coworkers. No evidence was found for the consideration of the beliefs of other referents such as parents, spouses, or friends. Additionally, the majority of the research conducted in the subjective norm area deals with the transfer of learned material back at the job site. The limited research that examines subjective norms as they relate to motivation to learn will now be reviewed.

Cohen (1990) examined the effects of supervisor support on trainee motivation level in several field settings. A direct relationship was not found between supervisory support and motivation. However, there was an indirect relationship between supervisory support and motivation, through effort-performance and performance-outcome expectancies. Trainees of supportive supervisors were more likely to set goals, and trainees who set goals were found to be more motivated toward training than those who set no goals.

In their field study, Noe and Wilk (1993) examined several antecedents of development activity. Social support was a referent belief measure which asked trainees for their perceptions of managerial and peer support for use of skills learned in training and for attending developmental training programs. They found significant correlations between social support and motivation to learn, lending partial support to the notion that referent beliefs are related to behavioral intentions (motivation to learn). They concluded by emphasizing the

importance of support from peers and managers to facilitate development activity.

Noe and Schmitt (1986) found that trainees who agreed with the skill assessment made of them by their supervisors were more likely to see the training content as useful. If the supervisor detected an area that needed improvement, they expressed their beliefs about the usefulness of training by encouraging the trainee to attend the training program. In this study, agreement with the supervisor may have lead to a higher motivation to comply with the referent beliefs of the supervisor, resulting in a higher subjective norm. According to the Theory of Planned Behavior, the high subjective norm would result in the formation of behavioral intentions toward performing training-related behaviors, resulting in performing those behaviors and enhanced training performance.

Eden & Ravid (1982) and Eden & Shani (1982) examined the expectations of instructors for their impact on student performance. In these studies, instructors were told they had either high success or average success control group students. Students of the instructors who were told they had high success students had higher performance than the control group students of equal ability. The higher student performance continued even after the original instructor was replaced. This Pygmalion effect demonstrates the potential effect teacher expectations (beliefs) can have on student motivation and subsequent performance, especially when the student motivation to comply is

high.   More specifically, the referent beliefs of the instructors
resulted in higher levels of student performance through a high
subjective norm rating.

Based upon the research reviewed above, it appears that
motivation may be affected by the expectations of other people
the trainee is in contact with, and the trainee's motivation to
comply with these expectations.   The effect of other people on
trainee motivation will be explored further in this study by
including referents such as peers and family members.   The
following hypothesis are presented

Hypothesis 2a.   Referent beliefs and motivation to comply
will be positively related to subjective norms.

Hypothesis 2b.   Subjective norms will be positively related
to general behavioral intentions

Hypothesis 2c.   Subjective norms will be positively related
to specific behavioral intentions.

In addition to attitudes and subjective norms, perceived
behavioral control is also an antecedent of intentions in the
Theory of Planned Behavior.   We will now turn to that subject.

Perceived Behavioral Control

Perceived behavioral control is a belief about the ease of
performing a task.   Perceived control is determined by the
individual's control beliefs and the perceived power of those
beliefs to affect performance.   Control beliefs are those beliefs
the individual has about possessing the resources and/or
opportunities necessary to perform the behavior (Ajzen, 1985,

1987). Behavioral control is a necessary but not sufficient
cause of behavioral intentions. An individual with behavioral
control will not necessarily perform the behavior just because
they can. There must be other reasons for performing the
behavior as well. In the Theory of Planned Behavior, subjective
norms and attitudes may well represent those other sufficient
causes (Ajzen, 1985, 1987).

Control beliefs can be broken down into two general
categories based on their relationship to the individual. Those
factors external to the individual (situational constraints) and
those factors within the individual (self-efficacy). There has
been a great deal of research in the training literature dealing
with situational constraints and self-efficacy and their
influence on attitudes, motivation to learn, and motivation
toward transfer. Of particular interest to this paper are those
studies examining the relationship between motivation to learn
and situational constraints and self-efficacy. Each of the
control categories will now be examined in more detail, beginning
with situational constraints.

Situational Constraints.

In organizational settings there are several factors that
relate to the situation that will interfere with the employee's
work performance. Peters, O'Connor, and Eulberg (1985)
identified 11 work environment features that interfere with
workers' performance (e.g. lack of information or material
resources and available time). Phillips and Freedman (1984)

found a negative relationship between situational constraints and motivation. They concluded that people get frustrated when motivation does not lead to performance. They further concluded that decreased motivation occurs because the effort-performance expectancy drops considerably.

Mathieu, Tannenbaum, and Salas (1992) examined the effect of situational characteristics on training motivation. One of their situational characteristics was situational constraints. Significant negative correlations were reported between situational constraints and motivation. Using structural equation modeling, Mathieu et.al. found a marginally significant path between situational constraints and training motivation. The authors speculated that situational constraints may have an adverse impact not only on training motivation, but also on motivation to transfer what they learned in training as well as how they approach future training programs. Mathieu et. al. concluded by stating that trainees who know they face situational constraints in learning and applying the new information will have lower motivation for future training programs.

Hypothesis 3a. There will be a negative relationship between situational constraints and perceived behavioral control.

Self Efficacy.

The other category of perceived behavioral control relates to those factors within the individual. These factors relate to the individual's belief in their own ability to complete the task. These factors are generally referred to as self-efficacy

beliefs. Self-efficacy refers to "the conviction that one can successfully execute (a given) behavior" (Bandura, 1977, p. 163). The general finding of the self-efficacy literature has been that those with high self-efficacy outperform those with low self-efficacy (Bandura, 1977; Gist, Schwoerer, & Rosen, 1989), and stay on the task longer (Bouffard-Bouchard, 1990; Gist & Mitchell, 1992; Taylor, Locke, Lee, & Gist).

Self-efficacy is also related to motivation. Wood and Bandura (1993) see a relationship between goals and self-efficacy. People with high self-efficacy set higher goals, and are more committed to those goals. Performance is enhanced through challenging goals and commitment, even in the face of adversity.

Numerous other studies found significant positive relationships between self-efficacy and general and specific motivation (Warr & Bunce, 1995), physical and academic self-efficacy and motivation (Tannenbaum, Mathieu, Salas, and Canon-Bower, 1991), and academic self-efficacy and pretraining motivation (Noe & Wilk, 1993; Quinones, 1995),

Hypothesis 3b. There will be a positive relationship between self-efficacy and perceived behavioral control.

The evidence presented above clearly shows a link between both categories of control and motivation. There is a negative relationship between amount of situational constraints and motivation. In this instance, it is hypothesized that people become frustrated by their motivation not being linked to

desirable outcomes. Self-efficacy has a positive relationship with motivation. In this case, people rate their capacity to perform the behavior favorably, and feelings of control lead to higher levels of motivation.

Hypothesis 3c. There will be a positive relationship between perceived behavioral control and general behavioral intentions.

Hypothesis 3d. There will be a positive relationship between perceived behavioral control and specific behavioral intentions.

METHOD

Pilot Study

A pilot study was conducted to gather background information necessary to test the theory of planned behavior. Phone interviews were conducted with entry-level trainees, trainees who had completed the fundamentals class, and trainers. During the interview, subjects were asked what training behaviors would lead to scores in the top 20 percent of their training class. Using a performance level of scoring in the top 20 percent of their class, subjects were asked about the outcomes of this performance, what groups or people would care if they performed at this level, and how much control they felt they had over scoring this well.

Specific Behaviors of Interest

To determine what specific behaviors would lead to scoring in the top 20 percent of their class during this training program, the pilot group was asked the following question.

"What behaviors would you perform during this training program if you wanted to be ranked in the top 20 percent of your training class?"

Salient Outcomes

In order to determine the salient outcomes of being ranked in the top 20 percent of their training class, the pilot group was asked the following questions.

"What do you see as the advantages of being ranked in the top 20 percent of your class?"

"What do you see as the disadvantages of being ranked in the top 20 percent of your class?"

Salient Referents

In order to determine the trainees' possible salient referents, the pilot group of trainees was asked the following questions.

"Who are the people or groups who would especially approve of you being ranked in the top 20 percent of your class?"

"Who are the people or groups who would especially disapprove of you being ranked in the top 20 percent of your class?"

Salient Control Beliefs

In order to determine some of the impediments to doing well in training, the pilot group was asked the following questions.

"What are the barriers in the training environment that may make it difficult for you to be ranked in the top 20 percent of your class?"

"What are the barriers within yourself that may make it difficult for you to be ranked in the top 20 percent of your class?"

The results of the pilot study will be used to create a questionnaire. This questionnaire will be used to specifically test the Theory of Planned Behavior.

Participants

Subjects will be first-term enlisted personnel assigned to an Air Force Technical training center. Subjects will be selected based upon the classrooms to which they are assigned and their time of arrival for training. Selection will be made by class where all the students from the selected classes will participate. Subjects will participate as part of their training orientation program.

Procedure

Using the results from the pilot, study a questionnaire will be developed. The initial questionnaire will be mailed to the technical training center point of contact (POC). All questionnaire administrations will take place the first week of training during the orientation phase. Surveys will be administered "en masse" in a classroom setting.

The purpose of the first administration will be to obtain reliability estimates (Cronbach's alpha). If necessary, the questionnaire will be modified to increase reliability.

The revised questionnaire will be returned to the technical school POC for readministration. Questionnaires will be given until the desired sample size of 200 is obtained.

Measures

Several measures are required to test the Theory of Planned Behavior. These measures will be developed in accordance with the guidelines set forth by Ajzen and Fishbein (1980). The behavior of interest is doing well in the current training

program. More specifically, scoring in the top 20 percent of a
training class.

Scoring in the top 20 percent of a training class is made
possible by, among other things, performing certain training-
related behaviors. These behaviors represent a category of
specific behaviors. The outcome of the specific training
behaviors (scoring in the top 20 percent of the class) will be
referred to as Outcome I. While these specific behaviors are of
primary interest to this study, it is necessary to consider the
outcomes of scoring in the top 20 percent of the class as a way
of framing the content of the measures. The outcomes of scoring
in the top 20 percent of the class (promotions, choice
assignments, etc.) will be referred to as Outcome 2.

The questionnaire is made up of several sections which are
necessary for testing the Theory of Planned Behavior. Each of
those sections will be discussed below, and are shown in
Figure 3.

INSERT FIGURE 3 ABOUT HERE

Indirect Measures of the Model

Antecedents of Attitudes

Outcome Beliefs

There are two levels of outcome beliefs, each corresponding
to Outcome 1 or 2. Outcome Belief 1 refers to the beliefs
regarding the performance of the particular study behaviors. An

example question is: "Studying the training material until I thoroughly understand it will help me be ranked in the top 20 percent of the class: likely/unlikely." This type of question will be used for each identified study behavior.

Outcome Belief 2 refers to the outcome beliefs associated with scoring in the top 20 percent of the training class. An example question is: "Scoring in the top 20 percent of my training class will help me get promoted: likely/unlikely."

Outcome Evaluations

There are also two levels of outcome evaluations, each corresponding the Outcome 1 or 2. Outcome Evaluation 1 refers to the evaluation of the outcome of performing the particular study behaviors, namely scoring in the top 20 percent of the class. An example question is: "Being ranked in the top 20 percent of my class is: good/bad."

Outcome Evaluation 2 refers to the evaluation of possible outcomes of scoring in the top 20 percent of the class (promotions, choice of assignments). Outcome Evaluation 2 asked subjects to rate the desirability of each of the possible outcomes of scoring in the top 20 percent of their class. An example question is: "Getting promoted is: good/bad."

Outcome beliefs and evaluations will be scored on seven-point bipolar scales with endpoint anchors of -3 and +3. Each outcome belief will be multiplied by its respective outcome evaluation. The sum of these products will represent the belief-

based measure of attitude. This process will be done for Outcome 1 and Outcome 2 (Ajzen & Madden, 1986).

Antecedents of Subjective Norms

Referent Beliefs

The two levels of referent beliefs relate to Outcome 1 or 2. An example referent belief question for Outcome 1 is: "My parents think I should study the material until I thoroughly understand it: true/false." An example referent belief question for Outcome 2 is: "My parents think I should score in the top 20 percent of my training class: true/false."

Motivation to Comply

One level of motivation to comply is necessary because the referents are the same for Outcome 1 and 2. An example motivation to comply question is: "I want to do what my parents think I should do: agree/disagree."

Referent beliefs will be scored on a bipolar scale (-3 to +3), while motivation to comply will be scored on a seven-point unipolar scale (0 to +6). Each belief/motivation to comply pair will be multiplied together. The sum of these products represents the belief-based measure of subjective norm (Ajzen & Madden, 1986). This process will be done for Outcome 1 and Outcome 2.

Antecedents of Perceived Control

Situational Constraints

Situational constraints will be neasured for Outcome 1 and Outcome 2. An example of an Outcome 1 question is: "The lack of

training time will make it difficult for me to study the training material until I thoroughly understand it: agree/disagree." An example of an Outcome 2 question is: "The lack of training time will make it difficult for me to score in the top 20 percent of my training class: agree/disagree."

Seven-point unipolar scales (0 to +6) will be used. The responses to each question will be summed to provide a situational constraint scores for Outcome 1 and Outcome 2.

Self-Efficacy

A self-efficacy scale will be used to determine the trainees' self-efficacy for the class ranking they would obtain and for each study behavior. The scale is similar to the one developed by Locke, Frederick, Lee, and Bobko (1984). This scale uses magnitude and strength estimates for various behaviors. Example items from this measure include:

"I can score in the top 30 percent of my training class."

"I can score in the top 20 percent on my training class."

"I can score in the top 10 percent of my training class."

"I can memorize the material for the exams."

Subjects respond to each question with a magnitude (yes or no) and a strength measure (0 to 100% certainty). A composite measure of self-efficacy will be obtained by summing the certainty (strength) estimates across all levels of magnitude that were answered yes (Lee & Bobko, 1994).

The situational constraint and self-efficacy scores will be

summed to provide a single belief-based measure of perceived behavioral control for Outcome 1 and Outcome 2.

Direct Measures of the Model

The direct measures of attitude, subjective norm, and perceived behavioral control will each have measures corresponding to Outcome 1 and Outcome 2.

Attitude

An example Outcome 1 attitude question is: "For me to memorize the material for the exams is: good/bad." An example Outcome 2 attitude question is: "For me to score in the top 20 percent of my training class is: good/bad." Responses will be recorded on seven-point bipolar scales (-3 to +3), and the responses summed to provide a direct measure of attitude for each outcome.

Subjective Norm

The direct measure of subjective norms toward Outcome 1 will be measured with a question like the following: "Most people who are important to me think I should memorize the material for the exams: agree/disagree." The subjective norms for Outcome 2 will be measured with a question similar to the following: "Most people who are important to me think I should score in the top 20 percent of my class in this training program." Lastly, motivation to comply will be measured with the following question: "I want to do what the people who are important to me think I should do: agree/disagree."

Seven-point bipolar scales will be used for referent beliefs

(-3 to +3) and seven-point unipolar scales will be used for
motivation to comply (0 to +6). The direct measures of
subjective norm for each outcome will be derived by multiplying
each belief with its corresponding motivation to comply, and
summing these products.

Perceived Control

The direct measure of perceived control for Outcome 1 will
be measured with questions similar to the following: "How much
control do you feel you have over memorizing the material for the
exams? none/alot", "Memorizing the material for the exams is:
easy/difficult", and "If I wanted to, I could memorize the
material for the exams: agree/disagree". The measures for
Outcome 2 will be similar to the following: "How much control do
you have in scoring in the top 20 percent of your class in this
training program? none/alot", "Scoring in the top 20 percent of
your class in this training program is: easy/difficult", and "If
I wanted to, I could score in the top 20 percent of my class in
this training program: likely/unlikely." Seven-point bipolar
scales will be used with -3 and +3 as the anchors. Outcome 1 and
Outcome 2 will have their own control scores.

Intentions

General Behavioral Intentions

The global measure of behavioral intention will be measured
with the following question: "I intend to score in the top 20
percent of my class in this training program: agree/disagree." A

seven-point unipolar scale will be used with end-point anchors of 0 and +6.   Intentions will be represented by this score.

Specific Behavioral Intentions

Intentions represent an aspiration level for the trainees. Because doing well in training represents a category of behaviors, intentions regarding each of the specific behaviors must be measured.   An example of this type of question is: "I intend to memorize the material for the exams: Agree/disagree." Seven-point unipolar scales will be use with endpoint anchors of 0 and +6.

A specific behavioral intention index will be derived by summing across all intention levels.   This single number will represent the specific intention or motivation level of the individual.

ANALYSIS AND EXPECTED RESULTS

Descriptive statistics will be run to get an idea of how the data looks, and to check for any abnormalities. Reliability analyses will be conducted to determine reliability estimates for each of the scales.

Correlational statistics will be calculated using all variables. Of particular interest are the correlations between the belief-based and direct measures of attitude, subjective norm, and behavioral control. According to the Theory of Planned Behavior, beliefs provide the basis for attitudes, subjective norms, and behavioral control (Ajzen & Madden, 1986). In support of the theory, these correlations should be moderate to high. Correlations should also be moderate to high between the general and specific intention measures, and between the general behavior intention and the study behavior index.
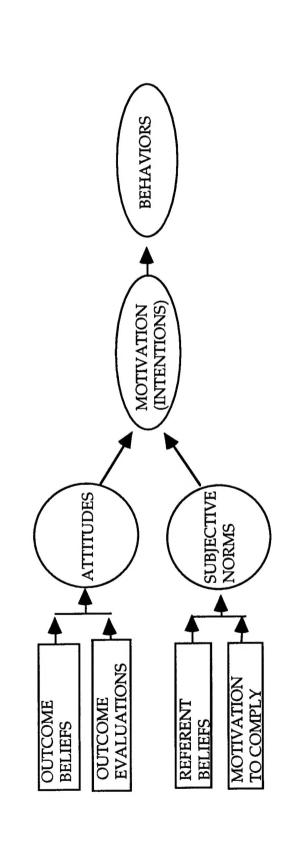
A myriad of regression analyses will be used to test the hypotheses. To test the predictive ability of the model, intentions will be regressed onto attitude, subjective norm, and perceived behavioral control. Separate analyses will be run for general and specific behaviors. In support of the model, the R^2 for the model should be moderate, with each variable making a significant contribution.
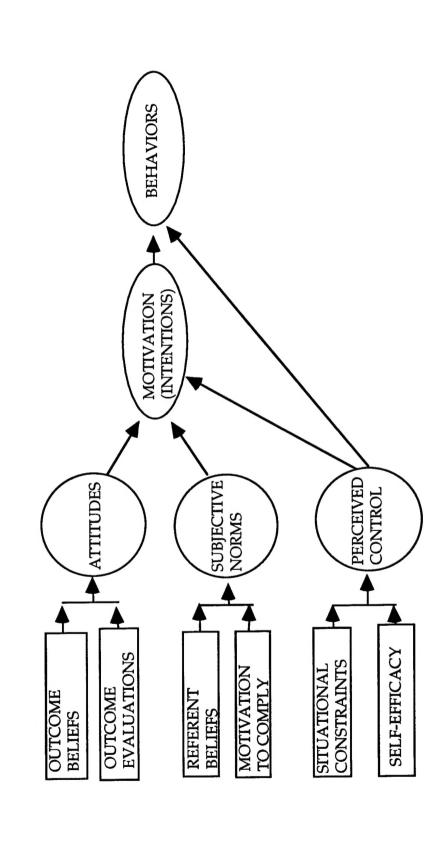
For every variable which makes a significant contribution, further analyses will be run to determine more specific

relationships. For example, if subjective norms are significant, an analysis will be run to determine if there is any particular referent who accounts for more variance than the others. If behavioral control is significant, an analysis will be run to determine if self-efficacy accounts for more variance than situational constraints.

PHONE INTERVIEW FORM

1. How well do you want to perform during this training program?
   a. top 10 percent
   b. top 20 percent
   c. top 30 percent
   d. top 40 percent
   e. top 50 percent
   f. bottom 50 percent

2. What behaviors would you perform during this training program if you wanted to be ranked in the top 20 percent of your class?

3. What do you see as the advantages of being ranked in the top 20 percent of your class?

4. What do you see as the disadvantages of being ranked in the top 20 percent of your class?

5. Who are the people or groups who would especially approve of you being ranked in the top 20 percent of your class?

6. Who are the people or groups who would especially disapprove of you being ranked in the top 20 percent of your class?

7. What are the barriers in the training environment that may make it difficult for you to be ranked in the top 20 percent of your class?

8. What are the barriers within yourself that may make it difficult for you to be ranked in the top 20 percent of your class?